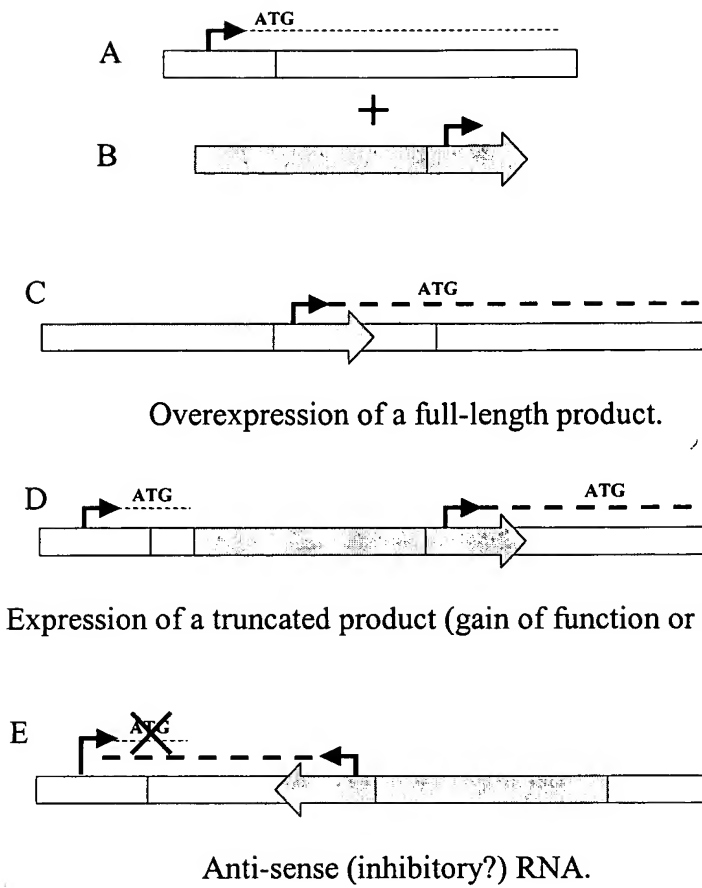


Figure 1



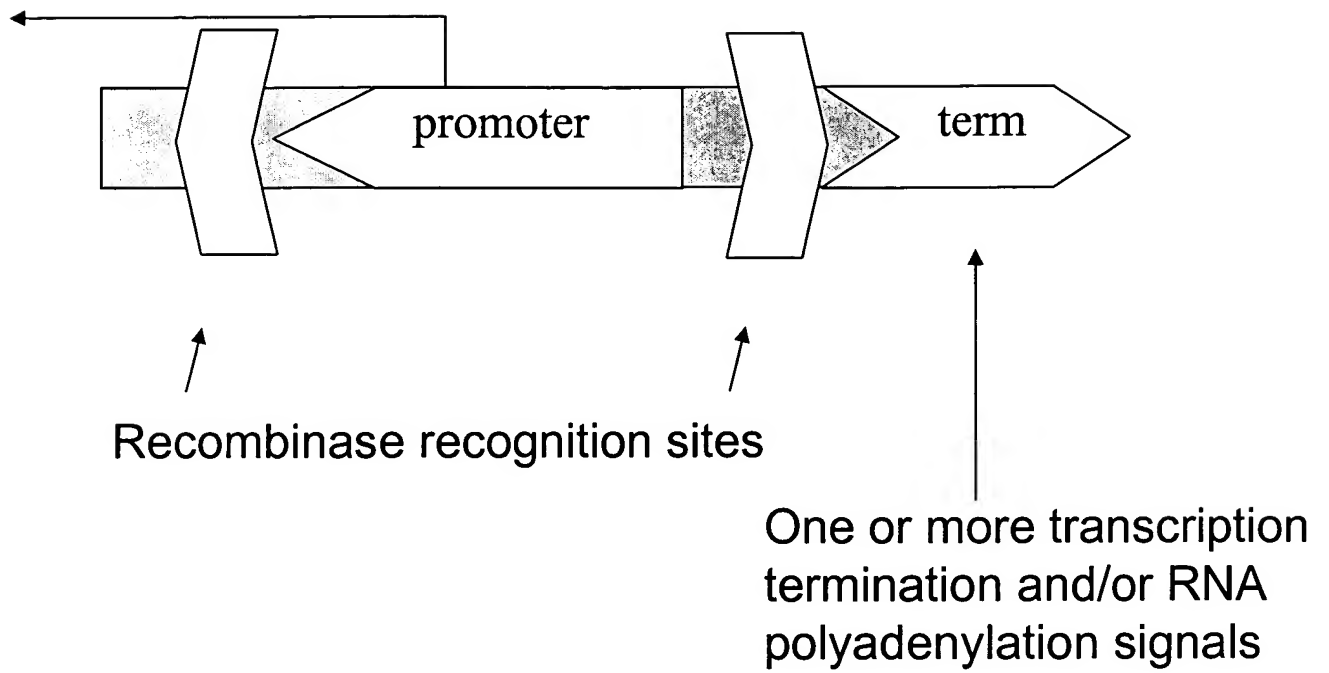


Figure 2

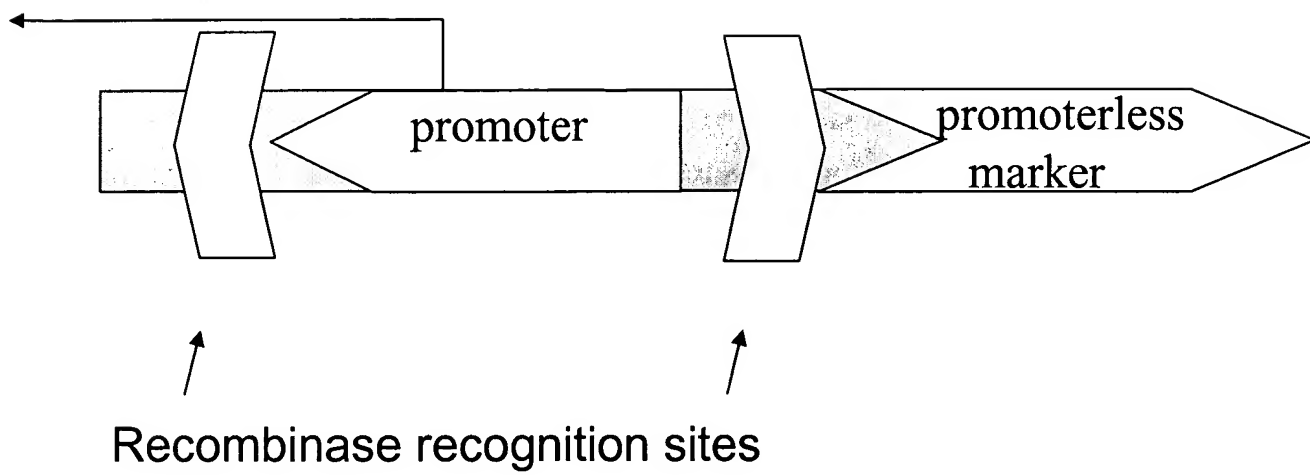


Figure 3

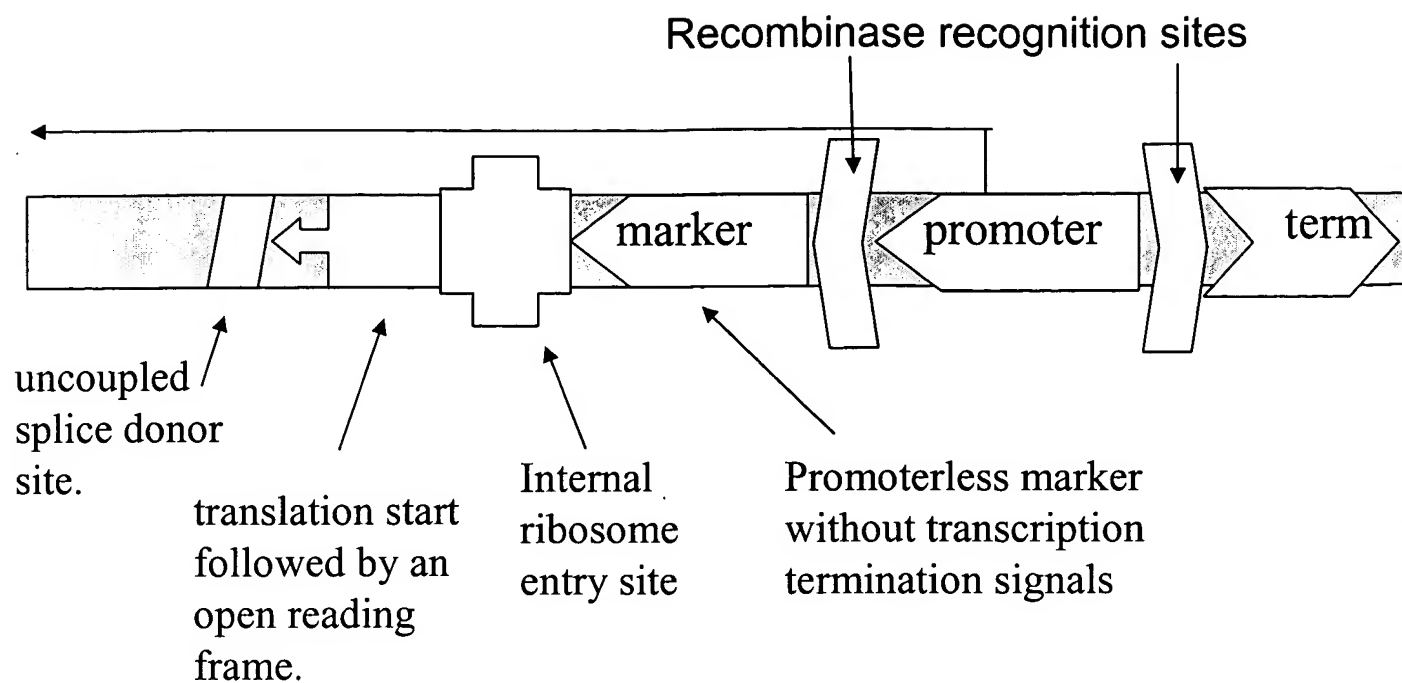


Figure 4

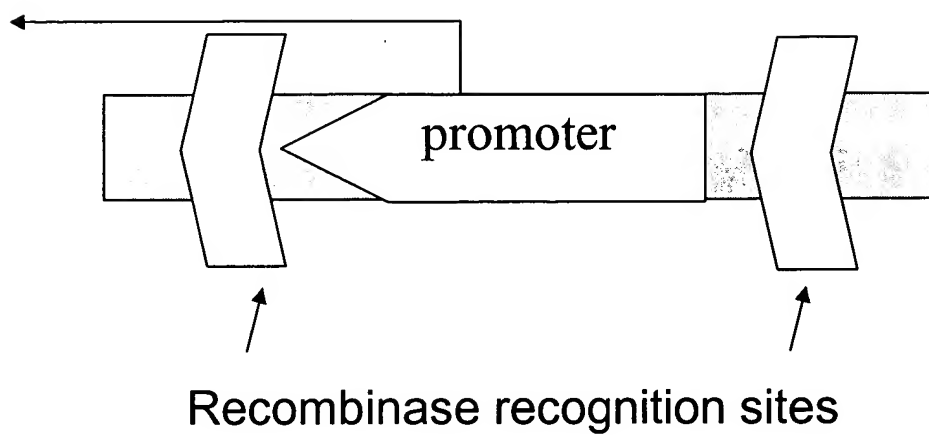


Figure 5

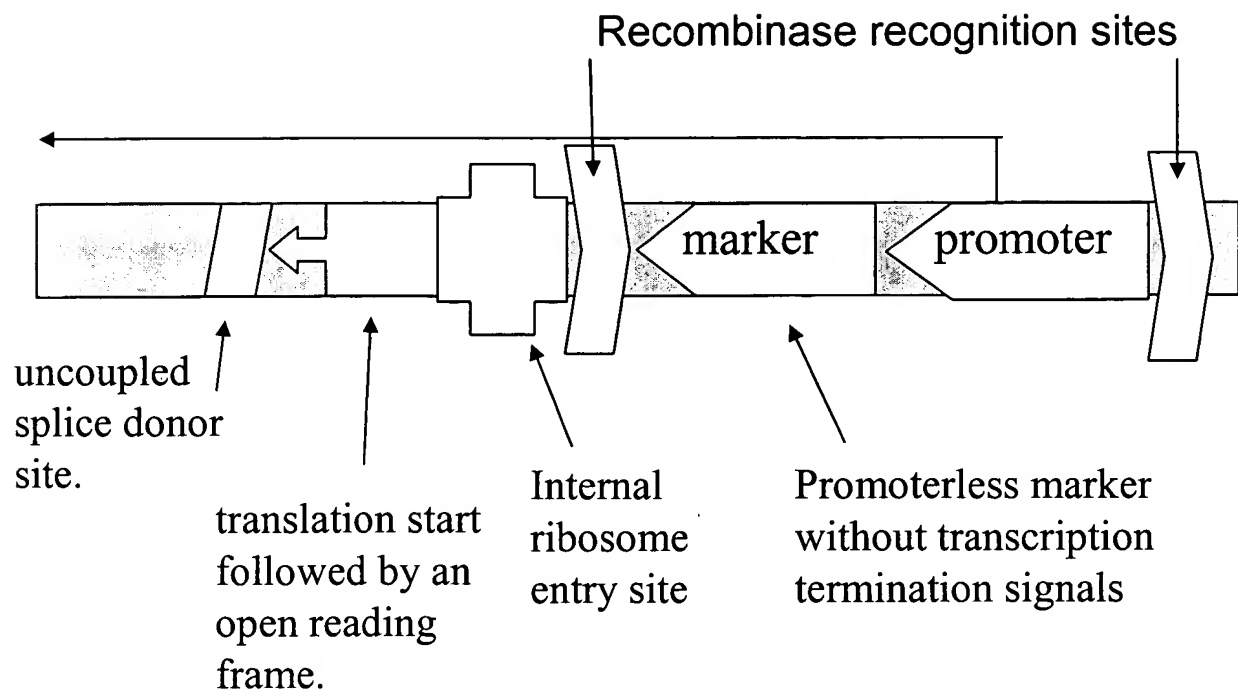
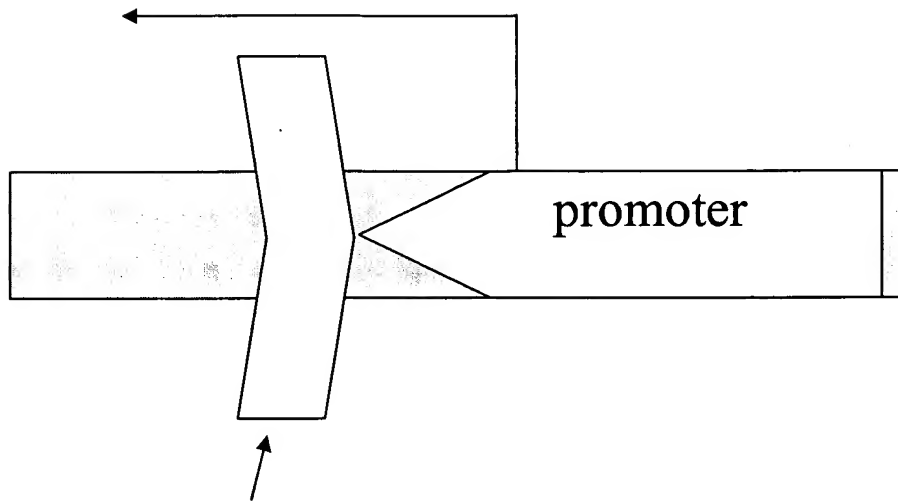


Figure 6



Recombinase recognition sites

Figure 7

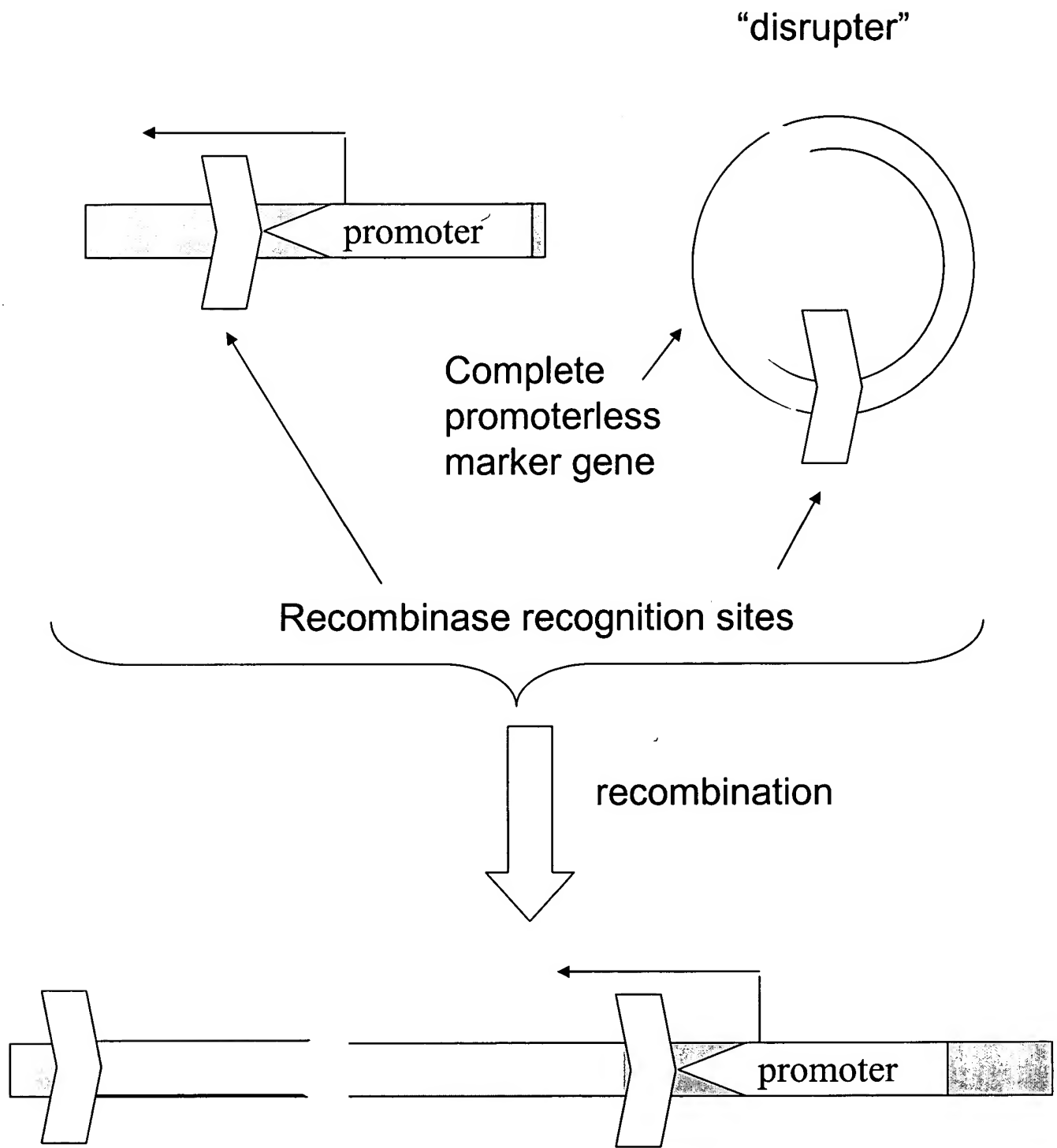


Figure 8



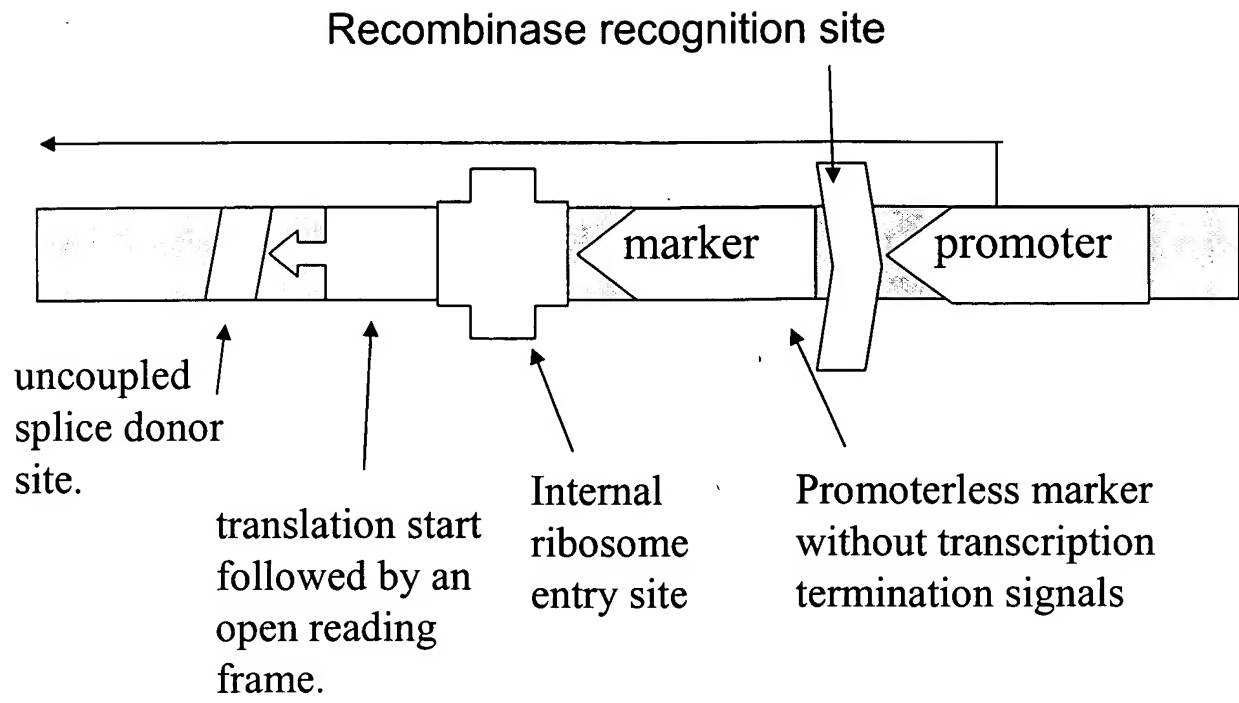


Figure 9

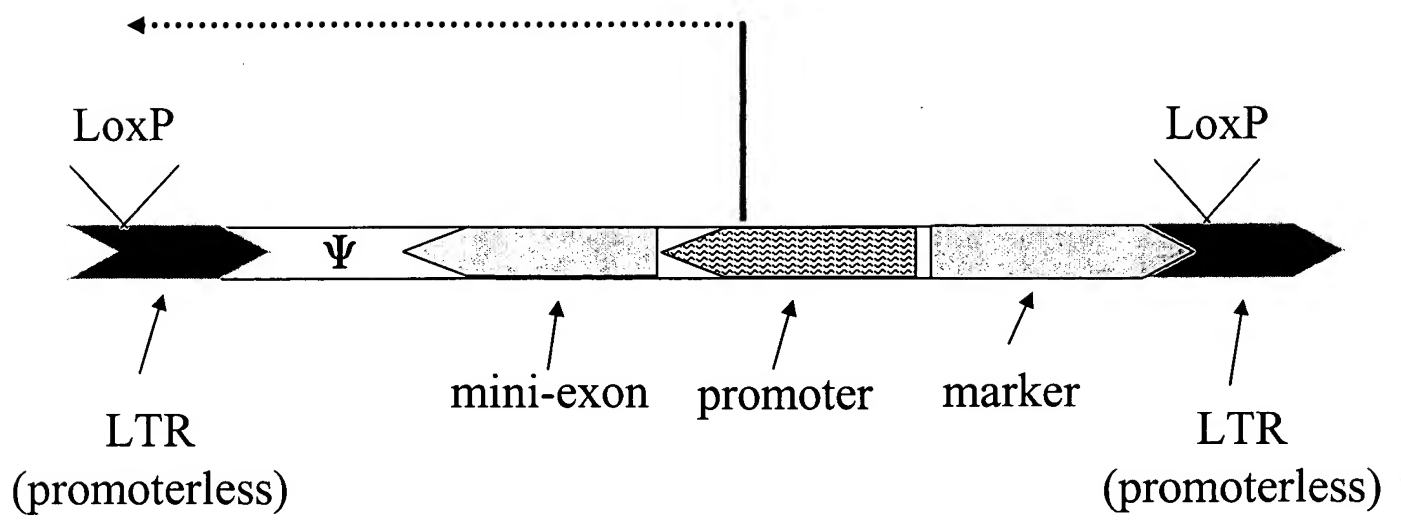


Figure 10

Figure 11

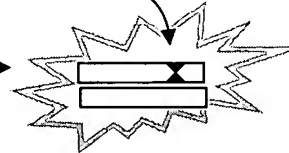
A vector harboring at least one promoter element capable of driving transcription towards the host DNA

A cell line in which the change in the studied traits results in a selectable phenotype ("selective system").



"Wild type"

mutation



"Mutant"

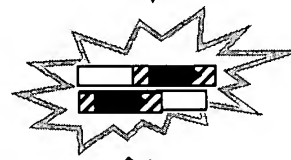
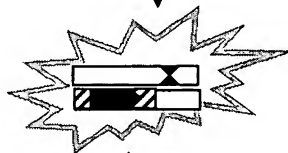
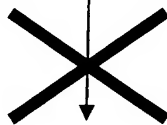
The vector randomly integrates into the genomes of the cells of the selective system. Some of the integration events affect the biological process of interest and the corresponding cells exhibit mutant phenotype. This phenotype may be also mimicked by spontaneous mutations. Also, additional (inert) inserts may co-exist within a cell with biologically active ones.



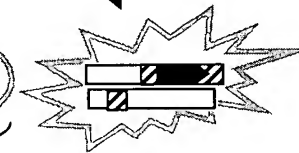
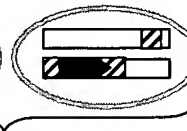
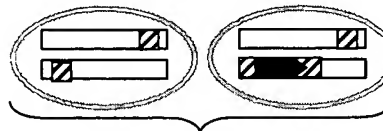
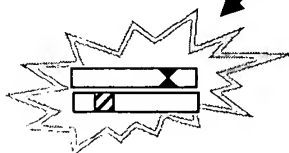
Figure 3



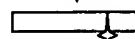
Only the cells with the mutant phenotype are identified and selected for further experimentation.



Site-specific recombination or transposase is used to disrupt the operable linkage between the exogenous promoter adjacent to a host cell DNA.



Frequent reversion of the phenotype indicates the presence of a biologically-active insert with the predicted structure. An integration ubiquitously lost in the reverted cells marks the gene of interest.



The identified gene

Figure 12

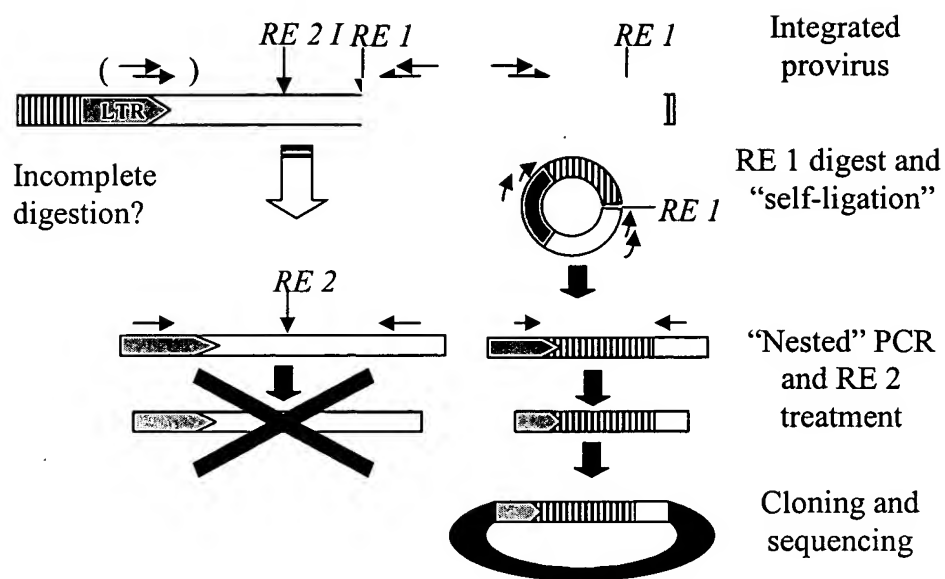


Figure 13

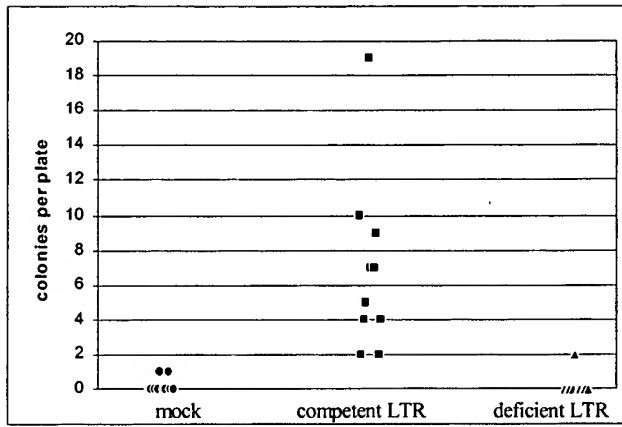
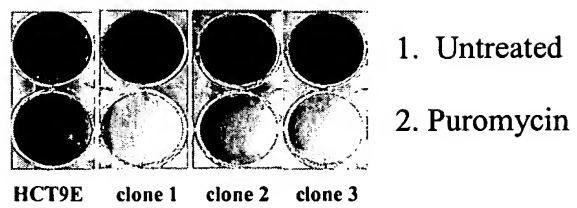
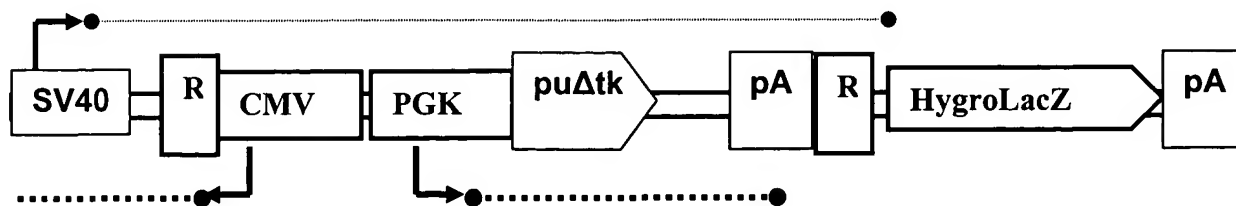


Figure 14



Panel A

Figure 15



Panel B

